



FINAL PROJECT GROUP 9

Integrating Disparate Solutions

Members Name

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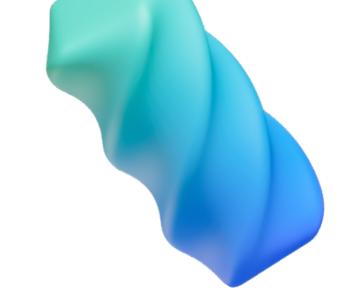
The goal of this project is to seamlessly integrate three applications together to facilitate data transfer between them.

Through this integration, we aim to demonstrate the efficacy of connecting disparate solutions to enhance operational efficiency and data coherence within a complex digital environment.





INTEGRATION DISPARATE SOLUTION



Technologies and resources we used to create this project.

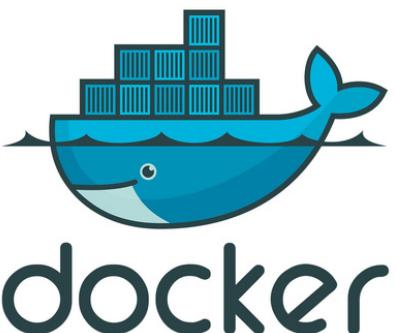
- EC2 instance
- Docker
- RDS
- Mariadb library
- WinSCP
- Cyberduck



amazon EC2



MariaDB



Amazon RDS

Utilized 2 AWS accounts for deployment and management of the project

App1 EC2 Instance



A screenshot of a Chrome browser window showing the AWS EC2 Instances page. The URL is `us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:instanceState=running`. The browser's title bar shows "Instances | EC2 | us-east-1". The AWS logo and "Services" link are visible in the top navigation bar.

The left sidebar menu includes:

- EC2 Dashboard
- EC2 Global View
- Events
- Console-to-Code Preview
- Instances
 - Instances
 - Instance Types
 - Launch Templates
 - Spot Requests
 - Savings Plans
 - Reserved Instances
 - Dedicated Hosts
 - Capacity Reservations New
- Images
 - AMIs
 - AMI Catalog
- Elastic Block Store
 - Volumes
 - Snapshots

The main content area displays "Instances (1/1)" with a single instance listed:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
ksolanki6269_ec2	i-0d6db7f575d4f4a8e	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1d	ec2-54-82-28-162.eca...

Below the table, the "Instance: i-0d6db7f575d4f4a8e (ksolanki6269_ec2)" details are shown:

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0d6db7f575d4f4a8e (ksolanki6269_ec2)	54.82.28.162 open address	172.31.26.225
IPv6 address	Instance state	Public IPv4 DNS
-	Running	ec2-54-82-28-162.compute-1.amazonaws.com open address
Hostname type	Private IP DNS name (IPv4 only)	Elastic IP addresses
IP name: ip-172-31-26-225.ec2.internal	ip-172-31-26-225.ec2.internal	
Answer private resource DNS name	Instance type	t2.micro
ip-172-31-26-225.eca...		

The browser's bottom toolbar shows various application icons, including ChatGPT, Calendar, Mail, Google Chrome, Microsoft Teams, WhatsApp, Spotify, and Microsoft Word.

App1 RDS



A screenshot of the AWS RDS Management Console showing the details for a database named "ksolanki6269-db". The "Summary" tab is selected, displaying the following information:

DB identifier	Status	Role	Engine	Recommendations
ksolanki6269-db	Available	Instance	MySQL Community	2 Informational
CPU	Class	Current activity	Region & AZ	
2.89%	db.t3.micro	0	us-east-1	
		Connections		

The "Connectivity & security" tab is also visible, showing the endpoint and port details:

Endpoint & port	Networking	Security
Endpoint ksolanki6269- db.c582mkg4apxe.us-east- 1.rds.amazonaws.com	Availability Zone us-east-1d	VPC security groups launch-wizard-1 (sg-07e0b4f8ef22f6a80)
Port 3306	VPC vpc-0e40d839ad7b52516	<input checked="" type="checkbox"/> Active default (sg-07d4f0cb1a5c0a698)
	Subnet group default-vpc-0e40d839ad7b52516	<input checked="" type="checkbox"/> Active
		Publicly accessible

At the bottom of the screenshot, there are links for CloudShell, Feedback, and various legal notices.

App1 Docker Image and Container



```
[ec2-user@ip-172-31-26-225 ~]$ sudo docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
app1-v1 latest bcab5201f450 15 hours ago 684MB
[ec2-user@ip-172-31-26-225 ~]$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
9058b7c496c5 app1-v1 "docker-php-entrypoi..." 15 hours ago Up 15 hours 0.0.0:80->80/tcp, ::80->80/tcp app1-v1
[ec2-user@ip-172-31-26-225 ~]$
```

```
[ec2-user@ip-172-31-26-225 app1]$ mysql -h ksolanki6269-db.c582mkg4apxe.us-east-1.rds.amazonaws.com -u ksolanki6269 -P 3306 -p
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MySQL connection id is 283
Server version: 8.0.35 Source distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MySQL [(none)]> show databases;
+-----+
| Database |
+-----+
| app1      |
| information_schema |
| mysql     |
| performance_schema |
| sys       |
+-----+
5 rows in set (0.012 sec)

MySQL [(none)]> use app1;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

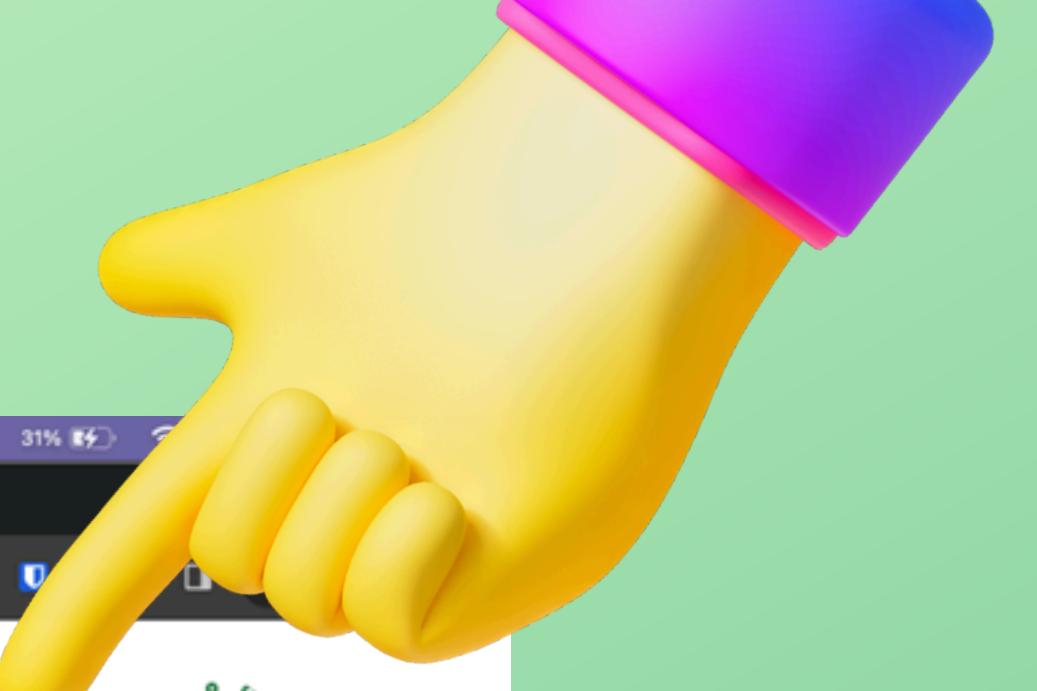
Database changed
MySQL [app1]> show tables;
+-----+
| Tables_in_app1 |
+-----+
| app_brands    |
| app_model     |
| app_parts     |
| migrations    |
| users         |
+-----+
5 rows in set (0.002 sec)

MySQL [app1]> select * from app_brands;
+----+----+----+----+
| id | name | created_at | modify_at   |
+----+----+----+----+
| 2  | Honda | 2022-03-11 04:26:13 | 2022-03-11 04:26:13 |
| 3  | Maruti Suzuki | 2022-03-11 04:26:20 | 2022-03-11 04:26:20 |
| 4  | Toyota | 2022-03-11 04:26:24 | 2022-03-11 04:26:24 |
| 5  | Ford   | 2022-03-18 15:41:49 | 2022-03-18 15:41:49 |
| 6  | TATA   | 2024-04-05 15:49:55 | 2024-04-05 15:49:55 |
+----+----+----+----+
5 rows in set (0.001 sec)

MySQL [app1]>
```

App1 Database (RDS 1)

App1 Output



A screenshot of a web browser showing the 'Brand List' page. The browser window has a purple header bar with the title 'Dashboard - IFACC'. The address bar shows 'Not Secure 54.82.28.162/brand'. The main content area is titled 'Dashboard' and shows a 'Brand List' table. The table has columns for 'Brand Name', 'date', and 'Actions'. There are five entries: Honda (date 2022-03-11 04:26:13), Maruti Suzuki (date 2022-03-11 04:26:20), Toyota (date 2022-03-11 04:26:24), Ford (date 2022-03-18 15:41:49), and TATA (date 2024-04-05 15:49:55). Each entry has a red 'delete' button. A red circle highlights the 'TATA' entry.

Brand Name	date	Actions
Honda	2022-03-11 04:26:13	<button>delete</button>
Maruti Suzuki	2022-03-11 04:26:20	<button>delete</button>
Toyota	2022-03-11 04:26:24	<button>delete</button>
Ford	2022-03-18 15:41:49	<button>delete</button>
TATA	2024-04-05 15:49:55	<button>delete</button>

App2 and App3 EC2

The screenshot shows the AWS EC2 Instance Details page for an instance named `joshma_ec2`. The instance is currently running and has a public IPv4 address of `54.234.76.9`. It is associated with a VPC ID of `vpc-0c0069e578ec4ae63` and a subnet ID of `subnet-0a1f0dab560958584`. The instance type is `t2.micro`, and its private IP DNS name is `ip-172-31-24-234.ec2.internal`. The instance was updated less than a minute ago.

Attribute	Value
Instance ID	i-090b1b695caaa83f1 (joshma_ec2)
Public IPv4 address	54.234.76.9 [open address]
Private IPv4 addresses	172.31.24.234
IPv6 address	-
Instance state	Running
Public IPv4 DNS	ec2-54-234-76-9.compute-1.amazonaws.com [open address]
Hostname type	IP name: ip-172-31-24-234.ec2.internal
Private IP DNS name (IPv4 only)	ip-172-31-24-234.ec2.internal
Instance type	t2.micro
Elastic IP addresses	-
Auto-assigned IP address	54.234.76.9 [Public IP]
VPC ID	vpc-0c0069e578ec4ae63 [open]
AWS Compute Optimizer finding	Opt-in to AWS Compute Optimizer for recommendations. [Learn more]
IAM Role	-
Subnet ID	subnet-0a1f0dab560958584 [open]
IMDSv2	Required
Auto Scaling Group name	-

Sidebar Navigation:

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Page Footer:

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App2 RDS

Database Details - RDS Manager

us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#database:id=joshma-db;is-cluster=false

aws Services Search [Alt+S] N. Virginia joshmajoby

Amazon RDS

Dashboard Databases Query Editor Performance insights Snapshots Exports in Amazon S3 Automated backups Reserved instances Proxies Subnet groups Parameter groups Option groups Custom engine versions Zero-ETL integrations New

Connectivity & security Monitoring Logs & events Configuration Zero-ETL integrations

Connectivity & security

Endpoint & port	Networking	Security
Endpoint joshma-db.cb4o00ewm0v1.us-east-1.rds.amazonaws.com	Availability Zone us-east-1d VPC vpc-0c0069e578ec4ae63	VPC security groups default (sg-04d79ebf818b84a4e) <input checked="" type="checkbox"/> Active launch-wizard-1 (sg-0ddbed9338af61677) <input checked="" type="checkbox"/> Active
Port 3306	Subnet group default-vpc-0c0069e578ec4ae63 Subnets subnet-01c819c53818cd52f subnet-0efe47d3a5484eb17 subnet-073068e931ee0b597	Publicly accessible Yes Certificate authority Info rds-ca-rsa2048-g1 Certificate authority date May 25, 2061, 19:34 (UTC-04:00)

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4:09 PM 2024-04-05 ENG US



App2 Output



Screenshot of the IFACC Dashboard - Orders page. The page shows a table of service orders. A red oval highlights the Customer Name 'Batman' in the second row. The table columns are: Customer Name, Date of service, vin, Mechanic Name, Service Type, DOC, and Actions.

Customer Name	Date of service	vin	Mechanic Name	Service Type	DOC	Actions
TEST	2022-03-21	7865645gdfg	TESTMEC	oil change	18 March, 2022	<button>delete</button>
Batman	2024-04-05	GJ23511VAAN	Cyborg	PAID	05 April, 2024	<button>delete</button>

The browser address bar shows the URL: 54.234.76.9/service. The system status bar at the bottom right shows the date: 2024-04-05, time: 4:16 PM, and location: ENG US.

App3 Output



Order Detail	
VIN	GJ235111VAAN
Brand	TATA
Model	NEXON EV MAX
Year	2024
Customer Name	Batman
Customer Address	Wayne Mention
Service Detail	
VIN	GJ235111VAAN
Mechanic Name	Cyborg
Type Of Service	PAID
Date of Service	05 April, 2024
Customer Name	Batman



Docker file we used to create container

The screenshot shows a code editor interface with a dark theme. On the left is a sidebar with various icons for file operations like copy, search, and settings. The main area displays a Dockerfile with the following content:

```
app1 > dockerfile > ...
1  # We use official php image as base image
2  FROM php:7.4-apache
3
4  # Install dependencies required for Laravel
5  RUN docker-php-ext-install pdo_mysql
6
7  # Enable Apache modules
8  RUN a2enmod rewrite
9
10 # Install Composer and make it available in the PATH
11 # This composer is used to install dependencies for the Laravel project
12 RUN curl -sS https://getcomposer.org/installer | php -- --install-dir=/usr/local/bin --filename=composer
13
14 # Set working directory
15 WORKDIR /var/www/html
16
17 # Copy website files into the working directory
18 COPY .
19
20 # Give permission to storage folder
21 RUN chmod -R 777 storage
22
23 # Expose ports
24 EXPOSE 80
25
26 # Start Apache in the foreground
27 CMD ["apache2-foreground"]
```

The status bar at the bottom indicates the file is a Dockerfile, and there are 27 lines of code with 4 spaces per tab.

Thank You!!!



References

Kus, A. (2024, January 22). How to create Laravel Docker image.

Buddy. <https://buddy.works/guides/laravel-in-docker>

Adedoyin, A. (2023, August 26). Dockerizing a Laravel Project: A Step-by-Step Guide. Medium.

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